

## **Rappahannock River Basin**

The Rappahannock River Basin is located in the northeastern portion of Virginia and covers 2,715 square miles or approximately 6.8 percent of the Commonwealth's total area.

The Rappahannock River Basin is bordered by the Potomac-Shenandoah Basin to the north and the York River Basin and Coastal Basin to the south. The headwaters lie in Fauquier and Rappahannock Counties and flow in a southeasterly direction to its mouth, where it enters the Chesapeake Bay between Lancaster and Middlesex Counties. The Rappahannock River Basin is 184 miles in length and varies in width from 20 to 50 miles.

The Rappahannock River Basin's major tributaries are the Hazel River, Thornton River, Mountain Run, Rapidan River, Robinson River, Cat Point Creek, and the Corotoman River.

The topography of the Rappahannock River Basin changes from steep to flat as it flows from the Blue Ridge Mountains to the Chesapeake Bay. About 51 percent of the basin land is forest, while pasture and cropland make up another 36 percent. Only about 6 percent of the land area is considered urban.

Most of the Rappahannock River Basin lies in the eastern Piedmont and Tidewater areas of the Commonwealth while its headwaters, located on the eastern slopes of the Blue Ridge, are considered to be in the northern and western Piedmont section.

The population for the Rappahannock River Basin was approximately 185,574 in 1994. The basin is mostly rural in character with no large population centers, however, the influence of metropolitan Washington is beginning to be felt in the Fredericksburg and Fauquier areas of the basin. All or portions of the following 18 counties lie within the Basin: Albemarle, Caroline, Culpeper, Essex, Fauquier, Gloucester, Greene, King and Queen, King George, Lancaster, Madison, Middlesex, Orange, Rappahannock, Richmond, Spotsylvania, Stafford and Westmoreland.

The climate of the basin tends to be moderate with an average annual temperature of 55°F in Culpeper, to 58°F in Urbanna. Extremes below zero and above 100°F have been recorded in the basin. Precipitation ranges from an annual average of 36 inches at the headwaters to 46 inches in the lower Tidewater or Coastal Plain but reaches an average of 48 inches at Big Meadows atop the Blue Ridge. Average annual snowfall ranges from 25 inches on the eastern slope of the Blue Ridge to 10 inches at the mouth of the Basin.

The Rappahannock River Basin is divided into two USGS hydrologic units as follows: HUC 02080103 - Rapidan-Upper Rappahannock; and HUC 02080104 - Lower Rappahannock.

Basin assessment information is presented in Tables 2.6-3-1, 2.6-3-2, 2.6-3-3.

TABLE 2.6-3-1

RAPPAHANNOCK RIVER BASIN INDIVIDUAL USE SUPPORT SUMMARY TABLE

**Total Size Monitored:**

Rivers - 600.61 miles  
 Lakes - 567.50 acres  
 Estuaries - 126.72 sq. miles

**Basin Size**

Rivers - 2,676miles  
 Lakes - 651acres  
 Estuaries -127 sq. miles

Use	Water Body Type	Size Fully Supporting	Size Fully Supporting but Threatened	Size Partially Supporting	Size Not Supporting	Total Size Assessed
<b>Aquatic Life</b>	River	144.42	977.36	9.88	6.92	1138.58
	Lake	650.70	0	0	0	650.7
	Estuary	0	52.48	74.24	0	126.72
<b>Fish Consumption</b>	River	2.676.43	0	0	0	2.676
	Lake	650.70	0	0	0	650.7
	Estuary	125.12	1.60	0	0	126.72
<b>Shellfishing</b>	River	-	-	-	-	0
	Lake	-	-	-	-	0
	Estuary	105.04	0	11.62	0	116.66
<b>Swimming</b>	River	138.78	52.93	43.50	7.41	242.62
	Lake	650.70	0	0	0	650.7
	Estuary	123.29	0.05	0.06	0	123.4
<b>Drinking Water</b>	River	136.05	0	0	0	136.05
	Lake	488.50	0	0	0	488.5
	Estuary	-	-	-	-	0

**TABLE 2.6-3-2 SIZE OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES IN RAPPAHANNOCK BASIN**

<b>Cause of Impairment</b>	<b>Type</b>	<b>Major Impact</b>	<b>Moderate/ Minor Impact</b>
<b>General Standards (Benthic)</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Unknown Toxicity</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Pesticides</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Priority Organics</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Metals</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>pH</b>	River (mi)	6.92	2.30
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Siltation</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Organic Enrichment/Low D.O.</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	74.24
<b>Thermal Modification</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Pathogen Indicators</b>	River (mi)	7.41	43.50
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	11.68
<b>Habitat Alterations</b>	River (mi)	0	7.58
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Suspended Solids</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0

**TABLE 2.6-3-3 SIZE OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES IN RAPPAHANNOCK BASIN**

Source of Impairment	Type	Major Impact	Moderate/ Minor Impact
<b>Industrial Point Sources</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Municipal Point Sources</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Combined Sewer Overflow</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Agriculture</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Silviculture</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Construction</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Urban Runoff/Storm Sewers</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Land Disposal</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>Natural Sources</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	74.24
<b>Source Unknown</b>	River (mi)	14.53	45.80
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0.06
<b>Point Source/Non Point Source</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>VDH Fish Consumption Advisory</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	0
<b>VDH Shellfish Condemnation</b>	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi <sup>2</sup> )	0	11.62

**Rappahannock Basin**  
**Appendix B for 1998 305(b) and 303(d) Reports**

[illegible]

**Rappahannock Basin**  
**Appendix B for 1998 305(b) and 303(d) Reports**

REGION	MONITORING STATIONS		CONVENTIONAL WATER COLUMN MONITORING DATA						OTHER MONITORING DATA												SEDIMENT.			FISH TISSUE.				BIO MON	TYPE BIOL STN	COMMENTS	
																					# d	# e	# f	# g							
	IDENTIFICATION NUMBER	TYPE	TEMP	RESU	D.O.	RESU	pH	T	THO	RESU	CHL	RESU	COL	BACT	# c	RESU	RES	ME	RES	RES	RES	ME	RES	RES	RES	RES	RES				RES
N-E21E	RPP073.71	SS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0	S	0	S										
N-E21E	RPP098.05	SS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0	S	0	S										
N-E21E	RPP099.73	SS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0	S	0	S										
N-E21R	3-MUY001.43	A	0 / 2	J	0 / 2	J	0 / 2	J	0 / 2	J	/	/	1 / 3	J				0	S	0	S										
P-E22E	RPP050.04	SS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0	S	0	S										
P-E22E	RPP054.43	SS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0	S	0	S										
P-E22E	RPP058.80	SS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0	S	0	S										
P-E22E	RPP063.32	SS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0	S	0	S										
P-E22E	3-RPP051.01	A	0 / 62	S	0 / 253	S	0 / 60	S	2 / 21	W*	6 / 79	S	2 / 37	S				--	--	--	--										
P-E22E	3-RPP064.40	A	0 / 41	S	1 / 138	S	1 / 41	S	/		5 / 45	S	2 / 36	S				--	--	--	--										
P-E22R	3-OCO010.47	A	0 / 17	S	2 / 17	Z	3 / 17	Z	0 / 16	S	/	/	1 / 16	S				--	--	--	--										
P-E23E	3-HOK000.74	A	0 / 50	S	1 / 50	S	5 / 50	S	2 / 58	W*	0 / 0		13 / 48	P				0	S	0	S	0	S	0	S			Natural Conditions STP upstream (Tappahannock)			
P-E23E	HOK000.74	C,SS	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0	S	0	S										
P-E23E	3-RPP041.96	A	0 / 12	S	0 / 12	J	0 / 11	S	/		0 / 12	J	0 / 0	W				--	--	--	--	0	S					Monthly, 1994 only.			
P-E23E	3-RPP042.12	A	0 / 62	S	0 / 221	S	0 / 60	S	0 / 21	W*	6 / 78	S	1 / 53	S				0	S	--	--										
P-E23E	3-RPP042.23	A	0 / 12	S	0 / 12	J	0 / 11	S	/		0 / 12	J	0 / 0	W				--	--	--	--										
P-E23R	3-CAT011.62	A	0 / 28	S	1 / 28	S	14 / 27	Z	0 / 26	S	/	/	0 / 26	S				0	S	0	S							Monthly, 1994 only. Natural Conditions			
P-E23R	3-MTL004.82	A	0 / 14	S	1 / 14	T	10 / 14	N	1 / 5	J	/	/	0 / 5	J				--	--	--	--										
P-E23R	3-PIS009.24	A	0 / 51	S	0 / 51	S	12 / 51	P	0 / 50	S	/	/	0 / 50	S				1	T	0	S							Zn Ecoregion Reference			
P-E23R	3-PIS009.24	B	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/														
P-E24E	3-RPP031.57	A	0 / 63	S	9 / 188	S	0 / 62	S	0 / 21	W*	5 / 81	S	1 / 43	S				--	--	--	--										
P-E24E	3-TOT005.11	A	0 / 35	S	1 / 35	S	0 / 35	S	0 / 31	W*	0 / 0		2 / 33	S				0	S	0	S										
P-E24R	3-BMS002.00	A	0 / 6	J	0 / 6	J	0 / 6	J	0 / 5	J	/	/	0 / 5	J				--	--	--	--										
P-E25E	3-FAM002.62	A	0 / 4	J	1 / 4	J	1 / 4	J	0 / 4	W*	0 / 0		1 / 4	J				0	S	0	S										
P-E25E	3-RPP017.29	A	0 / 11	J	0 / 11	S	0 / 10	J	/		0 / 0		0 / 1	W				--	--	--	--										
P-E25E	3-RPP017.72	A	0 / 62	S	96 / 481	P*	0 / 59	S	0 / 21	W*	0 / 0		0 / 54	S				0	S	0	S							Monthly, 1994 only. Natural Conditions			
P-E25E	3-RPP017.95	A	0 / 11	J	0 / 11	S	0 / 11	J	/		0 / 1	W						--	--	--	--							Monthly, 1994 only. Natural Conditions			
P-E25E	3-RPP025.52	A	0 /		26 / 231	P*	0 /		/		/	/	/	/	/	/	/	--	--	--	--							Natural Conditions Pb, Zn			
P-E25E	3-URB001.00	A	0 / 10	J	0 / 10	S	1 / 10	J	0 / 9	W*	0 / 0		1 / 9	J				2	T	0	S										
P-E25R	3-LGG004.54	A	0 / 5	J	0 / 5	J	0 / 5	J	0 / 5	J	/	/	0 / 5	J				0	S	0	S										
P-E26E	3-CRR003.38	A	0 / 63	S	18 / 219	S	0 / 61	S	0 / 41	W*	0 / 0		0 / 54	S				0	S	0	S										
P-E26E	3-RPP010.60	A	0 / 62	S	49 / 429	P*	0 / 60	S	0 / 21	W*	1 / 4	J	0 / 52	S				1	T	0	S							Zn & Natural Conditions			
P-E26E	RAP008.42	C	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/														
P-E26R	3-BLD000.58	A	0 / 9	J	0 / 9	J	0 / 9	J	0 / 9	J	/	/	5 / 9	T				0	S	0	S	0	S	0	S						